

REMARKS**RECEIVED
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This paper is intended as a full and complete response to the Office Action dated December 28, 2007. Applicant have included a one0noth

Claims 21, 23, 25, and 29 are currently amended.

Claim 26 is cancelled.

Claims 1, 4-6, 21-25, and 27-33 are currently pending in the application and in condition for allowance.

Entry of the foregoing amendments and reconsideration of the claims is respectfully requested.

Telephonic Interview on April 14, 2008

Applicant thanks the Examiner for the telephonic interview of Monday, April 14, 2008, with its representative Robb Edmonds.

Claim Rejections Under 35 USC § 102

The Office Action rejected Claims 25, 28, 29, and 33 under 35 U.S.C. § 102(b) as being anticipated by *Parker et al.* (U.S. Patent No. 4,692,311; hereafter "*Parker*"). Regarding the claim limitation of a "plurality of apertures" in base Claims 25 and 29, the Examiner asserts that *Parker* discloses "a lower surface having a plurality of apertures formed therethrough (see *Parker*, Fig.2; and column 6, lines 18-26)."

Applicant has amended base Claims 25 and 29, obviating the rejection. Although Applicant disagrees that a sintered metal structure as disclosed in *Parker* is similar or analogous

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to a plurality of apertures, Applicant is willing to amend base Claims 25 and 29 to more clearly differentiate the claimed subject matter and expedite allowance of the claims.

A sintered metal ring has no "apertures," as that term is known and used in the relevant art. A sintered metal ring is a solid structure having a plurality of obstructed flow paths formed therein, i.e. not apertures or holes formed therethrough. "Sintered" means "to cause (metallic powder, for example) to form a coherent mass by heating without melting" See, *The American Heritage® Dictionary of the English Language, Fourth Edition*. Houghton Mifflin Company, 2004. 15 Apr. 2008. <Dictionary.com <http://dictionary.reference.com/browse/sintered>>. In fact, a cross section cut of a sintered metal ring resembles a solid component, not a component with apertures formed therethrough as implicitly recited in the original claims. Nonetheless, Applicant proposing amended Claims 25 and 29 to recite a plurality of unobstructed openings to clearly differentiate from the tortuous, obstructed coherent mass of a sintered metal. For at least this reason, withdrawal of the rejection and allowance of the claims is respectfully requested.

Furthermore, Applicant has amended base Claims 25 and 29, to recite that "the second cross-sectional area is less than the first cross-sectional area." *Parker* does not teach, show, or suggest an apparatus for separating particulates from a carrier fluid, comprising an upper section with a first cross-sectional area, a lower section with a second cross-sectional area, wherein the second cross-sectional area is less than the first cross-sectional area, as required in Claims 25, 29, as amended, and those dependent therefrom. Withdrawal of the rejections and allowance of the claims is respectfully requested.

Claim Rejections Under 35 USC § 103

The Office Action rejected Claims 1, 5, 6, 21-24, 26 and 27 under 35 U.S.C. § 103(a) as being unpatentable over *Parker*. Alternatively, the Office Action rejected Claims 1, 5, 6, 21-24, 26, and 27 under 35 U.S.C. § 103(a) over *Parker* in view of *Simpson* (U.S. Patent No. 7,108,138; hereafter "*Simpson*") and as further evidenced by *Dewitz* (U.S. Patent No. 5,869,008; hereafter "*Dewitz*") or *Ko* (*In the Intermixing Region Behind Circular Cylinders with Stepwise Change of the Diameter*, 9 Experiments in Fluids 213-221 (1990); hereafter "*Ko*") or *Mori* (U.S. Patent No.

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6,041,754; hereafter "*Mori*") or *Wasif* (U.S. Publication No. 2005/0016178; hereafter "*Wasif*") or *Hwang* (U.S. Publication No. 2005/0183664; hereafter "*Hwang*"). The Office Action states, "it is known to those in the art that changes in diameter of a conduit through which fluid flows will induce a vortex to form therein."

Applicant respectfully disagrees and traverses the rejection. The present invention utilizes a vortex that is formed in a cylindrical section due to a tangential introduction of the fluid against the cylindrical surface. The vortex is independent of any relative difference in cross sectional area. Therefore, the Examiner's assertion that changes in the diameter of a conduit through which a fluid flows will induce a vortex to form therein, is misguided and irrelevant as pertaining to Applicant's invention as the vortex of the present invention is not formed in such manner.

Furthermore, each reference *Ko*, *Mori*, *Wasif*, and *Hwang*, cited by the Examiner to assert that a vortex can be created by an abrupt change in diameter, teaches that a vortex is created by a sudden or abrupt change from a smaller diameter to a larger diameter. See, for example, *Ko* in the Conclusion stating, "the intermixing region behind circular cylinders with stepwise change of the diameter show the presence of the big and small vortex wakes"; *Mori* at col. 1, lines 39-43 stating, "if there is a step difference where the passageway diameter expands in the direction of advance of intake air in the idle intake passageway 4 downstream of the idle intake regulating valve 5, a vortex is generated downstream of the step; *Wasif* at paragraph 23 stating, "The flat geometry of the burner insert assembly 88 provides an abrupt diameter change from the outlet end 24 of the main burner 12 to the combustion chamber 30, which causes a flow vortex 76"; and *Hwang* at paragraph 12 stating, "The vortex of the process gas G is generated due to the above-mentioned abrupt diameter difference." Applicant believes this teaching is the complete opposite of the claimed subject matter where the vortex is formed and sustained in the larger diameter section. Therefore, the Examiner's proposed modification of *Parker* does not teach, show, or suggest the claimed subject matter, but indeed, teaches away.

Furthermore, the Examiner states, "Simpson instructs that 'in order to enhance and aide the interior vortex development, one needs to introduce diffuser air at a cylinder diameter larger than the cyclone outlet diameter' (see Simpson, column 6, lines 12-24)." The Examiner also

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states, "Simpson discloses wherein his cyclone material classifier uses 'a plurality of openings disposed through a lower portion of the stripping section' (see Simpson, column 6, lines 12-24)."

Applicant respectfully disagrees. *Simpson* does not teach, show, or suggest introducing a stripping fluid through a plurality of unobstructed openings formed through a lower exterior wall of a stripping zone. In fact, *Simpson* teaches the opposite. *Simpson* states, "It has been found that in order to enhance and aid the interior vortex 702 development, one needs to introduce diffuser air 304 at a cylinder diameter 342 which is *larger than the cyclone outlet diameter 103*." See, *Simpson* at col. 6, lines 16-19 (emphasis added). *Simpson* further states, "one is able to enhance and encourage the up draft interior vortex 702 by *placing the air slots 305 around cylinder outer periphery 350* in an angled relationship having an angle theta 344 as shown in Fig. 5." See, *Simpson* at col. 6, ll.1-4 (emphasis added). The air slots 305 disclosed by *Simpson* are disposed around the outer cylindrical wall of the diffuser housing 301 and not disposed through a lower portion of the stripping section as required in the claims.

Therefore, modifying *Parker* as taught by *Simpson* would frustrate the intent and objective of *Parker*. If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. See, *In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984); MPEP § 2143.01. For at least this reason, withdrawal of the rejection and allowance of the claims is respectfully requested.

Parker and *Simpson* have been discussed and distinguished above. *Dewitz* adds nothing to the deficiencies of *Parker* and *Simpson*. Therefore, a combination of *Parker*, *Simpson*, and *Dewitz* does not teach, show, or suggest all claim limitations of Claims 1, 21, 23, 25 and those dependent therefrom. Withdrawal of the rejection and allowance of the claims is respectfully requested.

The Office Action rejected Claim 4 under 35 U.S.C. § 103(a) as being unpatentable over *Parker* in view of *Fandel* (U.S. Patent No. 5,843,377; hereafter "*Fandel*"). Alternatively, the

Office Action rejected Claim 4 under 35 U.S.C. § 103(a) over being unpatentable over *Parker* in view of *Simpson* and *Fandel*.

Applicant respectfully traverses the rejections. Neither *Parker* nor *Simpson*, alone or in combination, teach, show, or suggest all the limitations of Claim 1 from which Claim 4 depends. *Fandel* adds nothing to the deficiencies of *Parker* and *Simpson*. Therefore, Claim 4 is allowable for at least the same reasons as Claim 1. Withdrawal of the rejection and allowance of Claim 4 is respectfully requested.

The Office Action rejected Claims 30-32 under 35 U.S.C. § 103(a) as being unpatentable over *Parker*. Since Claims 30-32 include all the limitations of base Claim 29, Claims 30-32 are allowable for at least the same reasons. Withdrawal of the rejection and allowance of the Claims is respectfully requested.

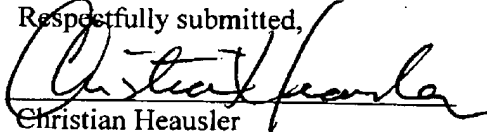
Conclusion

Having addressed all issues set out in the office action, Applicant respectfully submits that the pending claims are now in condition for allowance. Applicant invites the Examiner to telephone the undersigned attorney if there are any issues outstanding which have not been addressed to the Examiner's satisfaction. The Commissioner is hereby authorized to charge counsel's Deposit Account No. 11-0400, for any fees, including extension of time fees and excess claim fees, required to make this response timely and acceptable to the Office.

Date

4/23/08

Respectfully submitted,



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